

NASA Space Mechanisms Handbook and Reference Guide Expanded Into CD-ROM Set

NASA has been involved with the design, fabrication, testing, and operational use of space mechanisms since the earliest years of space exploration. Drawing upon the vast base of knowledge amassed since that time and in recognition of the maturity of the development of space mechanisms, a Space Mechanisms Handbook was written at the NASA Glenn Research Center that details the state-of-the-art in space mechanisms design as of 1998.

NASA's objective in developing this Space Mechanisms Handbook was to provide readily accessible information on such areas as space mechanisms design, mechanical component availability and use, testing and qualification of mechanical systems, and a listing of worldwide space mechanisms experts and testing facilities in the United States.

Recently, researchers at Glenn expanded the Handbook into a two-volume CD-ROM set in an Adobe Acrobat format.¹ In addition to the handbook, the CD's include (1) the two-volume *Space Mechanisms Lessons Learned Study*, (2) proceedings from all the NASA-hosted Aerospace Mechanisms Symposia held through the year 2000, (3) the *Space Materials Handbook*, (4) the *Lubrication Handbook for the Space Industry*, (5) the *Structural & Mechanical Systems Long-Life Assurance Design Guidelines*, (6) the *Space Environments and Effects Source-Book*, (7) the *Spacecraft Deployable Appendages manual*, (8) the *Fastener Design Manual*, (9) *A Manual for Pyrotechnic Design, Development and Qualification*, (10) the *Report on Alternative Devices to Pyrotechnics on Spacecraft*, and (11) *Gearing* (a manual). In addition, numerous other papers on tribology and lubrication are included.

By placing all these research and application results in a single, searchable CD-ROM set, we believe that we have provided a powerful information resource to technical personnel working on space mechanical applications. In addition, we believe that this CDROM set will be a permanent reference resource for future space mechanisms work. The NASA Space Mechanisms Handbook and Reference Guide is available in either print or CD versions to qualified requestors who are U.S. citizens.

Find out more about this research:

Glenn's Mechanical Components Branch <http://www.grc.nasa.gov/WWW/5900/5950/>

Space Mechanism Project <http://www.grc.nasa.gov/WWW/spacemech/>

Information about obtaining the handbook

<http://www.grc.nasa.gov/WWW/spacemech/CD-info.html>

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Programs/Projects: SRF/Solid Lubricated Journal Bearings as Backup Bearings for

Magnetic Bearings, SRF/Torque Limited Touchdown Bearing System for Magnetic Bearings, SRF/New Concepts in Low Cost, Higher Reliability and Less Complex Flywheel Systems

¹The CD-ROM set is available, to qualified requestors, from Glenn's Mechanical Components Branch.